

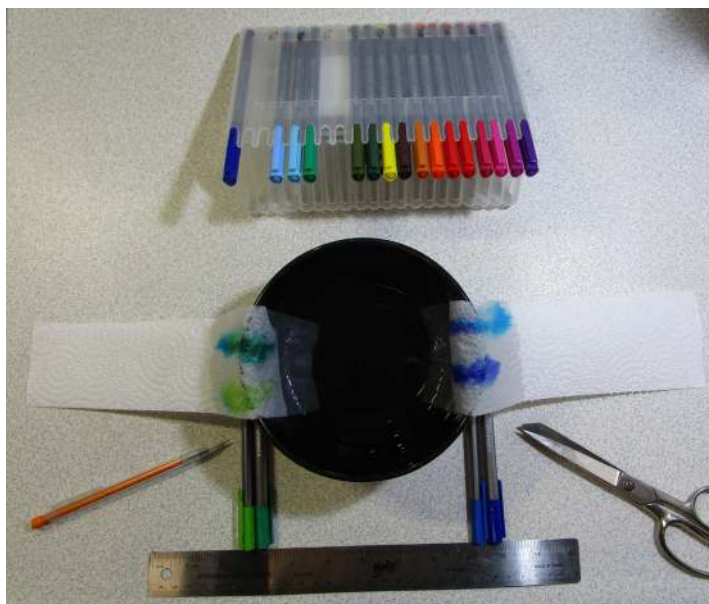
# Chroma of Markers

Red combines with yellow to make orange, but what if you want to reverse that and see what a colour is made of?

That's where the science of chromatography comes in. Grab some markers or even a few different black markers and we'll reveal what's inside.

## Supplies:

- > Markers
- > Paper towel
- > Ruler
- > Pencil
- > Scissors
- > Open container
- > A cup of water



## Procedure:

Cut the paper towel into long strips. Mine were about 2 ½ inches wide by 11 inches long. You'll need about 1 ¼ inches per colour, so if you make it wider you'll be able to test more colours right next to each other.

Using the ruler and pencil, measure and mark a line about 1 ½ inch from the bottom of the strip. Draw the line across the whole strip. This is where you'll colour in a square of colour.

Select a marker. Make and colour in a square about ½ by ½ inch centred on the line. It doesn't have to be exact, and it can be a circle or other shape about the same size on the line.

Put about a ½ inch of water in the container. Dip the end of the strip into the water, and lay it over the side. Wait for the water to travel up the paper towel and separate the colours.

## Science:

There are two things going on here.

1.) Colours that were combined in the marker are made of molecules that have \_\_\_\_\_

\_\_\_\_\_

2.) The molecules of colours are separated out by the capillary action that is \_\_\_\_\_

\_\_\_\_\_

## Experiment ideas!

Take several different brands of the same colour. Are they different?

What colours are in black?

What colours make up brown?

Will different paper towels work?

Will different liquids work?

Can pens and permanent markers be separated?

Can highlighters be separated?

If you were to separate a marker, you would see that it's a cotton tube soaked with the colours that flow out. Can you recreate the exact colours you've seen in the markers with paint you combine?

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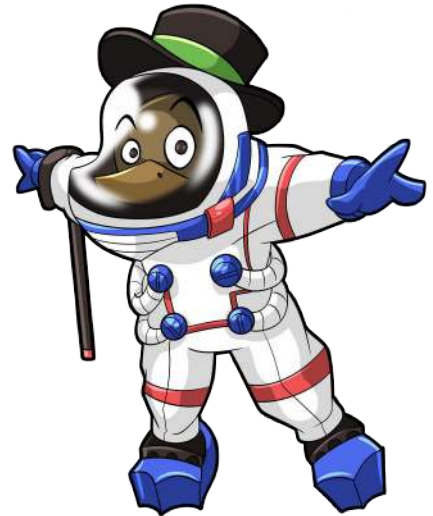
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